

CLAIMS

What is claimed is

1. A method of identifying row type or Fusarium head blight (FHB) resistance in a barley or related *Triticeae* plant, comprising the use of at least one molecular marker shown in the linkage maps of FIGS. 1 and 2, that is linked with a gene that controls row type.
2. The method of claim 1, wherein a test plant is identified as having two-rowed or six-rowed spikes when a molecular marker in the test plant shows the same type as a barley or related *Triticeae* plant that is two-rowed or six-rowed, respectively.
3. The method of claim 1, wherein the test plant is identified as FHB resistant or FHB susceptible when the molecular marker in the test plant shows the same type as a barley or related *Triticeae* plant that is FHB resistant or FHB susceptible, respectively.
4. The method of any one of claims 1 to 3, wherein the molecular marker comprises the nucleotide sequence set forth in any of SEQ ID NOS:1 to 5, or a partial sequence thereof.
5. The method of any one of claims 1 to 4, comprising the following steps (a) to (d):
 - (a) preparing a DNA sample from a barley or related *Triticeae* plant;
 - (b) digesting the prepared DNA sample with a restriction enzyme;
 - (c) separating the DNA fragments by size; and
 - (d) comparing the size of a detected DNA fragment with that of a control.

6. The method of any one of claims 1 to 4, comprising the following steps (a) to (d):
 - (a) preparing a DNA sample from a barley or related *Triticeae* plant;
 - (b) performing a PCR reaction using primer DNAs, with the prepared DNA sample as a template;
 - (c) separating the amplified DNA fragments by size; and
 - (d) comparing the size of a detected DNA fragment with that of a control.
7. The method of any one of claims 1 to 4, comprising the following steps (a) to (e):
 - (a) preparing a DNA sample from a barley or related *Triticeae* plant;
 - (b) digesting the prepared DNA sample with a restriction enzyme;
 - (c) performing an AFLP reaction using the digested DNA sample as a template;
 - (d) separating the amplified DNA fragments by size; and
 - (e) comparing the detected DNA pattern with that of a control.
8. The method of any one of claims 1 to 7, wherein the barley or related *Triticeae* plant is a barley.
9. A reagent for identifying row type or FHB resistance in a barley or related *Triticeae* plant, comprising an oligonucleotide of at least 15 nucleotides that is complementary to a DNA comprising the nucleotide sequence set forth in any of SEQ ID NOS:1 to 5, or a complementary strand thereof.
10. A reagent for identifying row type or FHB resistance in a barley or related *Triticeae* plant, comprising an oligonucleotide comprising the nucleotide sequence set forth in any of SEQ ID NOS:6 and 7.
11. The reagent of claim 9 or 10, wherein the barley or related *Triticeae* plant is a barley.

12. A method of generating an artificially altered barley or related *Triticeae* plant having two-rowed spikes, comprising the step of selecting at an early stage a plant identified as being two-rowed using the method of any one of claims 1 to 7.

13. A method of generating an artificially altered barley or related *Triticeae* plant having six-rowed spikes, comprising the step of selecting at an early stage a plant identified as being six-rowed using the method of any one of claims 1 to 7.

14. A method of generating an artificially altered barley or related *Triticeae* plant having a trait of FHB resistance, comprising the step of selecting at an early stage a plant identified as FHB resistant using the method of any one of claims 1 to 7.

15. A method of generating an artificially altered barley or related *Triticeae* plant having a trait of FHB susceptibility, comprising the step of selecting at an early stage a plant identified as FHB susceptible using the method of any one of claims 1 to 7.

16. The method of any one of claims 12 to 15, wherein the barley or related *Triticeae* plant is barley.

17. A barley or related *Triticeae* plant having two-rowed spikes, generated by the method of claim 12.

18. A barley or related *Triticeae* plant having six-rowed spikes, generated by the method of claim 13.

19. A barley or related *Triticeae* plant with FHB resistance, generated by the method of claim 14.

20. A barley or related *Triticeae* plant with FHB susceptibility, generated by the method of claim 15.

21. The barley or related *Triticeae* plant of any one of claims 17 to 20, wherein the barley or related *Triticeae* plant is a barley.

22. A barley or related *Triticeae* plant, which is a progeny or clone of the barley or related *Triticeae* plant of any one of claims 17 to 21.

23. A reproductive material of the barley or related *Triticeae* plant of any one of claims 17 to 22.